INSTALLATION GUIDE

NI VXIpc™-882

This guide contains information about installing and troubleshooting your NI VXIpc-882 controller and components. This guide refers to the *NI VXIpc-882 User Manual*, which you should have received in either hardcopy or PDF format with your VXI controller. The PDF version of this manual is also available online at `ni.com/support`.

Caution Electrostatic discharge can damage your controller. To avoid such damage, handle the controller only in a proper ESD-controlled environment.

Installing the NI VXIpc-882

This section contains general installation instructions for the NI VXIpc-882 controller. Consult your VXIbus chassis user manual or technical reference manual for specific instructions and warnings.

1. Plug in your chassis before installing the controller. The power cord grounds the chassis and protects it from electrical damage while you are installing the controller.

Caution To protect both yourself and the chassis from electrical hazards, the chassis should remain off until you finish installing the controller.

2. Remove or open any doors or covers blocking access to the chassis slots.

Caution If the controller is not configured for automatic System Controller detection, be certain that the slot you select in your VXIbus chassis matches the controller configuration as either a System Controller device or a Non-System Controller device. Installing the controller into a slot that does not correspond with the jumper setting can damage the controller, the VXIbus backplane, or both. See the *NI VXIpc-882 User Manual* for jumper configuration information.

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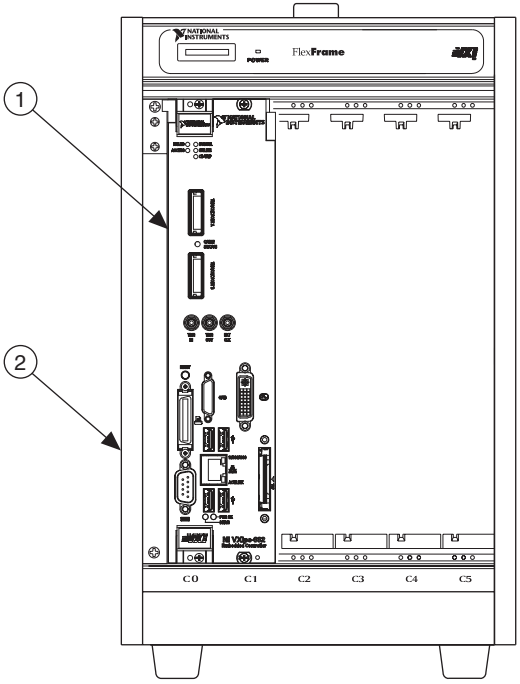
3. Insert the controller in the desired slot by aligning the top and bottom of the controller with the card-edge guides inside the chassis. Slowly push the controller straight into the slot until its plug connectors are resting on the backplane receptacle connectors. Using slow, evenly distributed pressure, press the module straight in until it seats in the expansion slot. The front panel of the controller should be even with the front panel of the chassis.
4. Tighten the retaining screws on the top and bottom edges of the front panel.
5. Check the installation.
6. Connect the keyboard and mouse to the USB connectors.

Note Install a noise-suppression ferrite (included in your shipping kit) onto the external USB cable when using a USB mouse or keyboard to ensure that your device meets all EMC standards applicable to your country. For more information on installing the ferrite, refer to KnowledgeBase 4Q0899P6 at `ni.com`.

7. Connect the DVI-I monitor video cable to the DVI-I connector.
8. Connect devices to ports as required by your system configuration.
9. Replace or close any doors or covers on the chassis.
10. Power on the chassis.
11. The controller should now boot. If the controller does not boot, see *What if the NI VXIpc-882 does not boot?* in the *Troubleshooting* section.
12. On the first boot of the controller, a setup program automatically runs.
13. Follow the prompts in the setup program to fully configure your controller.
14. When prompted for the Windows serial number, enter the serial number of the operating system from the included certificate.
15. Your controller is now ready for development.

Figure 1 shows an NI VXIpc-882 installed in the system controller slot of a National Instruments VXI chassis. You can place VXI devices in any other slot.



1 NI VXIpc-882 Controller	2 VXI Chassis

Figure 1. NI VXIpc-882 Controller Installed in a VXI Chassis

How to Remove the Controller from the VXI Chassis

The NI VXIpc-882 controllers are designed for easy handling. To remove the controller from the VXI chassis, complete the following steps:

1. Shut down all applications and the operating system.
2. Turn off power.
3. Disconnect devices from the front panel ports as your system configuration requires.
4. Remove the retaining screws in the controller front panel.
5. Push the upper ejector handle up and the lower ejector handle down until the controller pops out of the backplane connectors.
6. Slide the controller out of the chassis.

Removing the NI VXIpc-882 Component Side Cover

The NI VXIpc-882 is housed in a metal enclosure comprised of a component-side (top), solder-side (bottom), and rear cover to improve EMC performance and provide easy handling. Remove the component side cover to access the jumper settings.

Complete the following steps to remove the top and rear covers from the controller.

1. Remove the three Phillips-head screws attaching the rear cover to the component-side cover.
2. Remove the eight screws holding the component-side cover to the solder side cover, and the two screws holding the component-side cover to the module standoffs.
3. Lift the component-side and rear covers away from the module.

Installing and Upgrading RAM

The NI VXIpc-882 uses PC2 5300 DDR2 SDRAM and supports up to 2 GB in each of the two RAM sockets.

National Instruments recommends the following size SO-DIMMs for use with the NI VXIpc-882 controller (SDRAM):

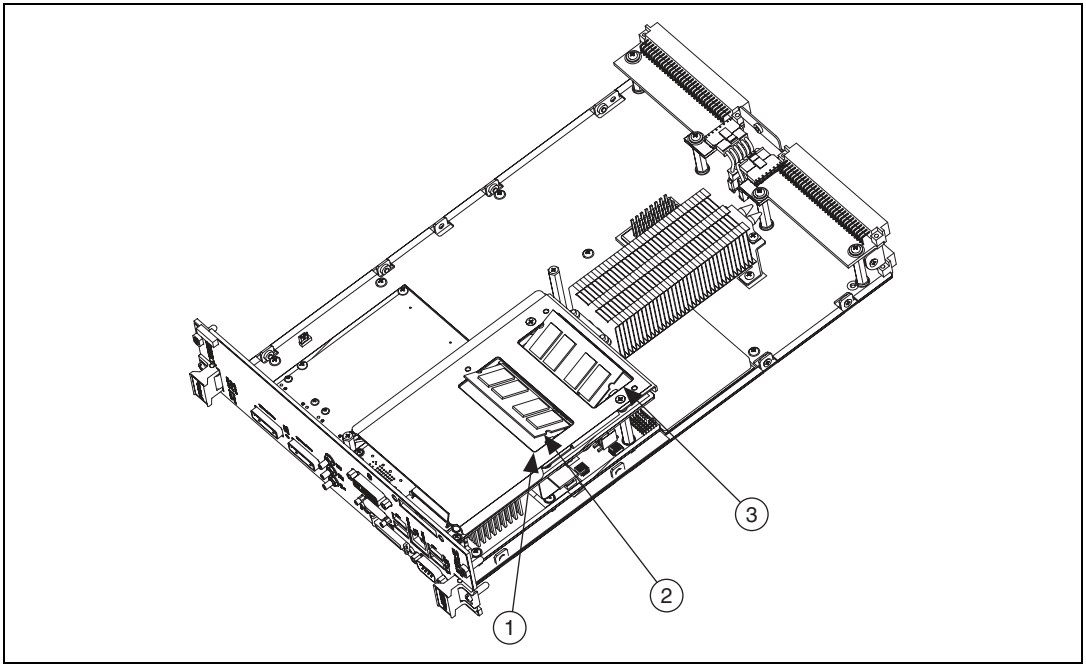
- PC2-5300 1 GB, 128 MB × 64, CL 5, 1.18 in. max (NI part number 779302-1024)
- PC2-5300 2 GB, 256 MB × 64, CL 5, 1.18 in. max (NI part number 780031-2048)

Note National Instruments has tested and verified that the DDR2 SO-DIMMs we sell work with the NI VXIpc-882. We recommend you purchase your DDR2 SO-DIMM modules from National Instruments. Other off-the-shelf DDR2 SO-DIMM modules are not guaranteed to work properly.

To add or replace RAM for the NI VXIpc-882, complete the following steps:

1. Remove the NI VXIpc-882 from the chassis. See the removal instructions in the *How to Remove the Controller from the VXI Chassis* section.
2. Remove the component side cover. Refer to the removal instructions in the *Removing the NI VXIpc-882 Component Side Cover* section.
3. Add the SO-DIMM modules to the empty SO-DIMM sockets. See Figure 2.

Note To optimize both memory capacity and system performance, use the same size and speed memory module in each of the two module slots. The use of different size modules in each slot is supported, but system performance will be slower than using two matched modules. However, two mismatched modules will result in better performance than using a single module.



1	SO-DIMM Socket XA1	2	SO-DIMM Module	3	SO-DIMM Socket XA2

Figure 2. Installing a SO-DIMM in an NI VXIpc-882 Controller

Installing and Removing the Internal Hard Drive

Follow these steps to remove the internal hard drive from your NI VXIpc-882 controller:

1. Remove the controller from the chassis. See the removal instructions in the *How to Remove the Controller from the VXI Chassis* section.
2. Remove the component side cover. See the removal instructions in the *Removing the NI VXIpc-882 Component Side Cover* section.
3. Remove the four screws under the solder side cover that hold the hard drive in place. You will need a 2 mm hex driver to remove the M3 button head screws.

Caution Be careful when sliding the hard drive toward the bottom of the controller. The hard drive could contact components on the motherboard, causing severe damage to both the components and motherboard.

4. Carefully and slowly slide the hard drive toward the bottom of the controller to free the pins from the SATA docking connector.
5. When the pins are free of the connector, lift the hard drive off of the motherboard.

Note Always handle the hard drive in accordance with the handling instructions outlined by the hard drive manufacturer.

Complete the following steps to install the internal hard drive in your NI VXIpc-882 controller:

1. Be sure the insulating pad is properly placed on the motherboard over the hard drive ground plane.

Caution Use care when installing the hard drive. The hard drive could contact components on the motherboard, causing severe damage to both the components and motherboard.

2. Set the hard drive on the motherboard and carefully slide the drive forward until it seats firmly in the IDE connector. The insulating pad should be between the hard drive and the motherboard.
3. Reinstall the four screws that hold the hard drive in place.
4. Reinstall the component side cover.

The controller is now ready to be reinstalled in the VXI mainframe.

Troubleshooting

What if the NI VXIpc-882 does not boot?

Several problems can cause a controller not to boot. Here are some things to look for and possible solutions.

Things to Notice

- Which LEDs come on? The **PWR OK** LED should stay lit. The **DRIVE** LED should blink during boot as the disk is accessed.
- What appears on the display? Does it hang at some particular point (BIOS, Operating System, etc.)? If nothing appears on the screen, try a different monitor. Does your monitor work with a different PC? If it hangs, note the last screen output that you saw for reference when consulting National Instruments technical support.

- What has changed about the system? Did you recently move the system? Was there electrical storm activity? Did you recently add a new module, memory chip, or piece of software?

Things to Try

- Make sure the chassis is plugged into a working power source.
- Check any fuses or circuit breakers in the chassis or other power supply (such as a UPS).
- Make sure the controller module is firmly seated in the chassis.
- Remove all other modules from the chassis.
- Remove any nonessential cables or devices.
- Try the controller in a different chassis.
- Try a similar controller in this same chassis.
- Recover the hard drive on the controller. (For more information, see the *NI VXIpc-882 User Manual*.)
- Clear the CMOS. (For more information, see the *NI VXIpc-882 User Manual*.)

My controller boots fine until I get to Windows, at which point I cannot read the screen. This may include garbled output, white screen, black screen, or an out of sync message from the monitor.

This problem usually results from having the video card output set past the limits of the monitor. You will need to boot Windows in Safe Mode. To do this, reboot the controller. As Windows begins to boot, hold down <F8>. You should now be able to reset the video driver to lower settings. Try setting the resolution to 640 × 480 and the refresh rate to 60 Hz. Once you reboot, you can raise these values again, using the test option in Windows. These settings are accessible through the **Advanced** tab of the **Display** item in the **Control Panel**. Alternately, you can try a different monitor, preferably a newer and larger one.

If the system has been booted to Windows without a monitor attached, the driver may have defaulted to the video output connector being disabled. Press <Ctrl-Alt-F1> to re-enable the video display in Windows. Press <Ctrl-Alt-F4> to re-enable a DVI display. For more information, refer to KnowledgeBase 3OHCFRD8 at `ni.com/support`.

How do I restore the operating system on my NI VXIpc-882 controller?

NI VXIpc-882 controllers include two methods of restoring the original factory condition of your hard drive. Hard drive-based recovery stores a factory backup on a separate portion of your hard drive allowing you to restore your controller without additional media. The NI VXIpc-882 controller also ships with an OS Recovery CD that allows you to reinstall

your operating system onto your hard drive through an external DVD/CD-ROM. For more information on these tools, refer to the documentation on your hard drive in the `c:\Images\Recovery` directory or KnowledgeBase 2ZKC02OK at `ni.com/support`.

Note Your system hot key is <F4>. To access the hard drive-based recovery tool, press and hold <F4> when video first appears during the boot process.

If you need to recover your factory-installed operating system from a CD, you can use the included OS re-installation CD with an external CD-ROM drive such as a USB CD-ROM drive. Boot the VXI controller using the OS re-installation CD to recover the OS. You also may need to reinstall other software after using the CD to recover the OS.

Note Recovering the OS erases the contents of your hard disk. Back up any files you want to keep.

My CMOS is corrupted. How do I set it back to default?

1. Enter the BIOS setup program as described in the *NI VXIpc-882 User Manual*.
2. Press <F9> to load BIOS default**s**.
3. Answer **Y** (Yes) to the verification prompt.
4. Select **Save and Exit Setup**.

I can't change the display on the controller from 640 × 480 to 800 × 600. What's wrong?

Be sure the video driver is installed. If it is not, see the `Drivers.txt` file on the hard drive or recovery CD-ROM.

Where to Go for Support

The National Instruments Web site is your complete resource for technical support. At `ni.com/support` you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

A Declaration of Conformity (DoC) is our claim of compliance with the Council of the European Communities using the manufacturer's declaration of conformity. This system affords the user protection for electromagnetic compatibility (EMC) and product safety. You can obtain the DoC for your product by visiting `ni.com/certification`. If your product supports calibration, you can obtain the calibration certificate for your product at `ni.com/calibration`.

National Instruments corporate headquarters is located at
11500 North Mopac Expressway, Austin, Texas, 78759-3504.
National Instruments also has offices located around the world to help address your support needs. For telephone support in the United States, create your service request at `ni.com/support` and follow the calling instructions or dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

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Mexico 01 800 010 0793, Netherlands 31 (0) 348 433 466,
New Zealand 0800 553 322, Norway 47 (0) 66 90 76 60,
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South Africa 27 0 11 805 8197, Spain 34 91 640 0085,
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